Workshop on Evaluating Behavior of Juvenile Salmon

Ken Lentz

On August 12, about 45 fisheries scientists attended a workshop entitled "Evaluating Behavior of Juvenile Salmon" hosted by the Central Valley Chinook Salmon project work team.

Pat Brandes (FWS) presented 11 questions for discussion. The project work team had identified the questions as significant to resolution of issues and anticipated that information presented at the workshop would be useful in addressing the questions. The questions addressed: the effects of various hydraulic conditions on salmon behavior and survival and on data collection; causes of smolt mortality in specific regions and reasons for mortality variation within the delta; comparability of data on hatchery- and naturally-spawned smolts; expansion of trawl catch data to estimates of abundance; life histories of chinook salmon races in the delta; and non-invasive sampling techniques.

Information presented by the four invited speakers is summarized here.

Pit Tags in the Columbia River

Richard Ledgerwood
National Marine Fisheries Service
(503/861-1853)

Ledgerwood described a 30-year (1966-1995) salmonid research program on the Columbia River, including successes and failures. He described the use of large purse seines and beach seines in his studies of juvenile salmon migration timing and the behavior of fish passing downriver through the Columbia River estuary. He described juvenile salmon survival studies associated with the eruption of Mount St. Helens, programs to measure survival at Columbia River dam bypass facilities, and the use of Pit tags to avoid sacrificing the fish, as in coded-wire tag recoveries.

Radio Tags in the Columbia River

Rip Shively
National Biological Service
(rip.shively@nbs.gov)

Shively described his programs, which used radiotelemetry to monitor northern squawfish and chinook salmon movement around Columbia River dams. He discussed a smolt investigation at John Day Dam that he conducted for the Army Corps of Engineers, using telemetry to determine fish movement near the dam. He also described experiments to evaluate the effect of surgical and gastric implanted radio transmitters in juvenile salmon.

Radio Tags in the Sacramento-San Joaquin

Mike McGowan
Garcia & Associates
(mcgowan@sfsu.edu)

McGowan described his program to evaluate juvenile chinook salmon habitat use/selection and daily behavior patterns in the Mokelumne River. He used gastric and surgical radio tag implants on yearling chinook in the Mokelumne River in 1995 and 1996. McGowan discussed his program in general but, due to the confidential nature associated with the use of his results, East Bay Municipal Utility District has reserved the right to release his results at its discretion.

Current Methods for Monitoring the Movement of Splittail, Chinook Salmon and Striped Bass

Marty Gingras
Department of Fish and Game
(mgingras@delta.dfg.ca.gov)

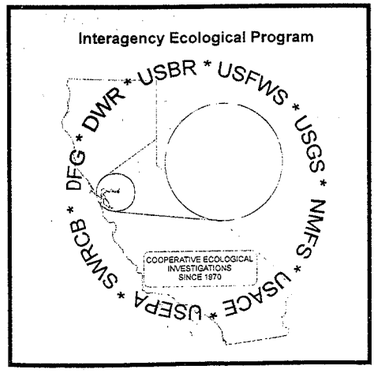
Gingras reported on three DFG/DWR programs conducted for the Interagency Program. The programs relied on radio and ultrasonic tags to document fish movement. The first was a study of adult/subadult striped bass at Clifton Court Forebay; he successfully documented the emigration of striped bass. The second was a study of adult chinook salmon movement past the Georgiana Slough acoustic barrier; he tagged 102 adult chinook and successfully tracked the movements of 55 of these tagged fish past the barrier. The third was a study of splittail spawning habitat and migration; he successfully detected splittail movement from their upstream spawning habitat downstream to Suisun Marsh, a considerable distance. Gingras concluded that many questions raised by Brandes could be addressed by radio and/or acoustic telemetry, that pulses of fish can be tracked, and that hydroacoustics could be applied to real-time monitoring and can be used to enhance trawl operations.

Status and Trends Issue

The January 1996 issue of the *Newsletter* focused on the status and trends of some key organisms and environmental features in the estuary and watershed. The issue contained data from 1995 and past years to indicate trends. We plan to do this again this winter but, in response to many concerns about getting the 1995 data ready by January 1996, the status and trends issue will be published in April. For those authors submitting articles last year, it is time to begin updating them. Anyone with ideas for new articles that fit the general theme of status and trends, let Randy Brown know by phone, email, or fax. The deadline for all articles will be March 31, 1997.

Interagency Program Logo

Last year the coordinators sponsored a contest to select a logo that can be used in Interagency Program correspondence, brochures, etc. Several people submitted suggestions, and the coordinators selected three finalists, which we presented in the last issue. Our readers have selected the logo shown here. Darryl Hayes (DWR) submitted the winning logo and will collect the $100 prize donated by the coordinators. The next step is for a graphics artist to do a final rendering.



Delta Outflow

Kate Le

Despite no precipitation during October 1995 through mid-December 1995, water year 1996 hydrologic conditions were quite promising for the rest of the year. The Delta Outflow Index for water year 1996 averaged about 36,200 cubic feet per second. The largest outflow was on February 24, with a peak of 211,000 cfs. Combined SWP and CVP pumping averaged about 7,200 cfs for the water year. CVP pumping was curtailed during March to allow maintenance at the fish facility. As for State Water Project, pumping ceased during November and December 1995 for aqueduct maintenance. Pumping also ceased for a day on February 2, 1996, so fish screens at Skinner Fish Facilitycould be cleaned, and on June 12 and September 11 for herbicide work to control vegetation growth in the California Aqueduct.